



**DuPont Legal**

Berley Mill Plaza, Room 25/1322  
PO Box 80025  
Wilmington, DE 19880-0025

**FAX COVER PAGE**

**September 10, 2003**

**Please Deliver to:** Examiner McElwain

**Re:** Application No. 09/732597  
Case No.: BB1413 US NA

**From:** Lynne Christenbury

**Fax :** (302) 892-1026

**Phone:** (302) 992-5481

**Pages:** 14 Including Cover Sheet

**OFFICIAL**

**RECEIVED  
CENTRAL FAX CENTER**

**SEP 10 2003**

**Confidentiality Notice:** The information contained in this facsimile message may be privileged and confidential information intended for the use of the addressee listed above. If you are neither the intended recipient nor the employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this faxed information is strictly prohibited. If you have received this fax in error, please immediately notify us by telephone to arrange for return of the original document to us. Thank you.

OFFICIAL

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**Complete if Known**

TOTAL AMOUNT OF PAYMENT	(\$)	410.00
-------------------------	------	--------

Application Number	08/732597
Filing Date	December 31, 2000
First Named Inventor	Rebecca E. Cahoon Et. Al.
Examiner Name	E. F. McElwain
Art Unit	1838
Attorney Docket No.	BB1413 US NA

**FEE CALCULATION (continued)**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Rev. 4/96

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

REBECCA E. CAHOON ET. AL.

CASE NO.: BB1413 US NA

APPLICATION NO.: 09/732597

GROUP ART UNIT: 1646

FILED: DECEMBER 08, 2000

EXAMINER: E. F. MCELWAIN

FOR: ENZYMES INVOLVED IN PETROSELINIC ACID BIOSYNTHESIS

LETTERVIA FACSIMILECommissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450OFFICIAL  
RECEIVED  
CENTRAL FAX CENTER

SEP 10 2003

Sir:

Enclosed herewith is a copy the response, appendices, petition for extension of time, fee sheet, the certificate of mailing dated June 30, 2003 and a copy of the postcard date stamped by the U.S. Patent and Trademark Office as being received on July 2, 2003 that were submitted in response to Office

Action dated January 29, 2003 in connection with the above-identified application.

These papers are being resubmitted pursuant to the request of Examiner McElwain made on September 10, 2003 since the original papers appear to have be missing.

Applicants respectfully request entry of these papers with an effective date of June 30, 2003.

Respectfully submitted,

LYNNE M. CHRISTENBURY  
ATTORNEY FOR APPLICANTS

Registration No.: 30,971

Telephone: (302) 992-5481

Facsimile: (302) 892-1026

Dated: September 10, 2003

PTO/SB/92 (06-03)

Approved for use through 04/30/2003. OMG 0551-0031  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Certificate of Mailing under 37 CFR 1.8**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

on June 30, 2003.  
Date

Lisa Z. Turner  
Signature

LISA Z. TURNER

Type or printed name of person signing Certificate

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

09/732,597  
BB1413 US NA  
AMENDMENT - 6 PAGES  
APPENDIX A - 1 PAGE  
APPENDIX B - 1 PAGE  
PETITION FOR EXTENSION OF TIME - 1 PAGE  
FEE SHEET - 1 PAGE  
POSTCARD

Burden Hour Statement: This form is estimated to take 0.03 hours to complete. Time will vary depending upon the needs of the individual case. Any documents on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20251. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20251.

THE STATE OF THE PATENT OFFICE HEREBY ACKNOWLEDGES THE  
RECEIPT, ON THE DATE INDICATED, OF THE FOLLOWING:

CASE NO.:

BH1413 US NA

APPLICATION NO.:

09/732597

CONFIRMATION NO.:

2801

DOCUMENT:

AMENDMENT - 6 PAGES, ~~RECEIVED~~ A - 1  
PAGE, APPENDIX B - 1 PAGE, PETITION  
FOR EXTENSION OF TIME - 1 PAGE, FEE  
SHEET - 1 PAGE, CERTIFICATE OF  
MAILING

ATTORNEY:

Lynne M. Christenbury



Rev. 10/99

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

EDGAR B. CAHOON ET. AL.

CASE NO.: BB1413 US NA

SERIAL NO.: 09/732597

GROUP ART UNIT: 1646

FILED: DECEMBER 08, 2000

EXAMINER: ELIZABETH MCELWAIN

FOR: ENZYMES INVOLVED IN PETROSELINIC ACID BIOSYNTHESIS

AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is in response to the Office Action dated January 29, 2003 regarding the above-referenced application. Applicants respectfully request reconsideration and submit the following in support thereof.

AMENDMENTS TO SPECIFICATION:

Delete paragraph page 5, lines 10-15 :

~~Figure 3 shows a mass spectral identification of novel (A) hexadecenoic acid (16:1), and (B) octadecenoic acid (18:1) isomers in transgenic tobacco callus expressing the *Hedera helix* acyl-ACP desaturase (clone ehhlc.pk002.f22, SEQ ID NOs:1 and 2). The mass spectra shown were obtained by gas chromatography-mass spectrometry (GC-MS) of dimethyl disulfide (DMS) derivatives of fatty acid methyl esters from tobacco callus expressing the cDNA for EST ehhlc.pk002.f22.~~

Amend page 33, lines 1-12:

$\Delta^4$  isomer (Fig. 3A). In addition, the mass spectrum of the dimethyl disulfide derivative of the novel 18:1 methyl ester in the transgenic tobacco callus contained diagnostic ions consistent with that of petroselinic acid, the 18:1 $\Delta^6$  isomer (Fig. 3B). These results thus indicate that the diverged acyl-ACP desaturase corresponding to the cDNA for EST ehhlc.pk002.f22 is associated with petroselinic acid synthesis. Based on the biosynthetic pathway for petroselinic acid previously described in Umbelliferae species [Cahoon, E.B. and Ohlrogge, J.B. (1994) *Plant Physiol.* 104:827-844], the *Hedera helix* diverged acyl-ACP desaturase is likely a  $\Delta^4$ -specific palmitoyl (16:0)-ACP desaturase. This is consistent with the presence of the novel 16:1 $\Delta^4$  isomer in the transgenic tobacco callus (Fig. 3A). The 16:1 $\Delta^4$  isomer bound to ACP likely serves as the biosynthetic precursor for petroselinic acid (18:1 $\Delta^6$ ), as